

# 100RC Catalog Services Sur

Partner	Service Name
100 Resilient Cities	City Resilience Perceptions Assessment Tool
100 Resilient Cities	Assets and Risk Tool
100 Resilient Cities	Systems Studio
100 Resilient Cities	Tactical Urban Resilience
100 Resilient Cities	City Resilience Actions Inventory Tool

Summary 2/6/2018

Description of Service
The tool advances the City's holistic resilience practice ensuring stakeholder opinions are incorporated into long-term strategies and planning.
The Assets and Risk Tool is designed for cities in Phase I of the 100RC Strategy Process to identify top shocks, stresses and vulnerable assets.
A multi-day workshop to tackle complex challenges by understanding them through systems' analysis. This tool helps familiarize participants with a systems thinking approach, build understanding around the challenges facing a specific system, identify how systems dynamics are at play in these challenges and spur
'Tactical Resilience' workshops help communities move strategies from paper to pavement. Products include a small-scale demonstration project and a summary report containing lessons learned and priority recommendations.
The Actions Inventory catalogs existing actions that contribute to the city's resilience. It provides a comprehensive view on the range of resilience contributors and activities underway across the city.

Yellow indicates service may require some form of funding

Ped indicates limited service offering requiring 100RC governance approval

Resilience Impact	Is Funding Required?	Limit- No. of cities per year
This offering is required for all member cities in Phase I of the 100RC Strategy Process. The tool is particularly useful as a structured and meaningful way to engage stakeholders in resilience concepts and development of the city's resilience strategy.	Never Required	Not Limited
The tool advances the City's resilience practice by approaching risk through a resilience lens that takes into consideration both shocks & stresses, considers known risks and future scenarios, and takes an all-assets view of physical vulnerability.	Sometimes Required	Not Limited
Resilience champions and initiative owners can use the momentum of the Systems Studio advance solutions that leverage systems dynamics and promote systems change with broad stakeholder support.	Always Required	Limited
?Tactical Resilience? workshops create an opportunity for stakeholders to learn about, and then deliver short-term change in neighborhoods. The ?learn by doing? approach embeds resilience-building concepts and opportunities at the lot, block, and neighborhood scale, ultimately positioning city and citizens to deliver long-term transformation together	Always Required	Limited
The tool advances the City's resilience practice by building and aligning the City's Resilient Strategy with existing efforts across multiple sectors. The tool sets the City up to ask not only what new actions are needed but to understand deeply how actions already underway can be advanced to contribute further to the City's resilience.	Never Required	Not Limited

In which region(s)

North America	USA Only	Latin America & the Caribbean	Europe	Middle East	East Africa
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is this service available?

North Africa	East Asia	West Africa	Southern Africa	South Asia	South East Asia
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100 Resilient Cities	Resilience Garage
100 Resilient Cities	Resilience Value Realization (RVR)
100 Resilient Cities	Problem Framing Workshop
Aerofarms	Economic Analysis of Vertical Farm Facility
AGU - American Geophysical Union	Thriving Earth Exchange Platform for Solutions, Tools, and Expertise in Earth an
AIA - American Institute of Architects-Foundation	Community Resilience Design Charettes

A workshop for peer-review of corporate and municipal cases through a resilience lens. The Garage generates both deeper resilience learning, as well as a more open structure for cross-sector collaboration.

Implementing stakeholders come to a shared understanding of resilience value and the steps necessary to protect it.

A process engaging city staff to crowdsource, prioritize and frame problems/opportunities for building city resilience in order to turn them into actionable challenges and identify possible approaches available in the market.

Aerofarms conducts an economic assessment of investing in and developing a vertical farming facility in each city.

TEX provides a platform for CROs to connect with Earth and space scientists to design and implement projects that use Earth and space science to advance resilience. TEX will provide a designated staff liaison to each city to provide support, and develop a hands-on workshop to jump start the process of finding and implementing solutions, by matching city leaders to scientists with relevant expertise to design and launch a TEX project.

Members of local AIA chapters, including architects and urban planners, will collaborate with cities to organize and conduct resilience design workshops that facilitate community engagement, analyze common community challenges, and develop urban design-based action plans with the community and stakeholders' input to address built environment challenges.

A sophisticated understanding of how to approach complex urban systems through a resilience lens. Tactical knowledge of how to apply key resilience concepts when evaluating projects and developing solutions to tough problems.	Always Required	Limited
Better planning and preparation at the front end will bump up the final resilience benefits that an opportunity will deliver over its full lifecycle	Always Required	Limited
Use of this tool is a best practice in problem sourcing and definition and identification of possible solution paths to those. Once used it can be easily replicated as means to engage stakeholders in ongoing cross-departmental collaboration and find solutions with multiple benefits.	Always Required	4
Cities looking to repurpose unused or vacant commercial lots as well as facing constrained access to fresh produce either due to limited supply chain, limited natural resources to grow produce or lack of local, year-round production can revitalize local economies through specific intervention.	Never Required	Not Limited
TEX is best suited for cities that are looking to implement the best ideas to solve for problems and priorities relating to natural hazards, natural resources, and climate change. It is useful for designing and advancing projects that apply these sciences to community resilience priorities with local or non-local scientists who are experts in the field.	Sometimes Required	Not Limited
The service is best suited for cities who are seeking a sprint style participatory visioning process guided by impartial experts in the built environment to produce creative design and development solutions for complex issues.	Never Required	Not Limited

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AIA - American Institute of Architects-Foundation	Training and Service Delivery of Post-disaster Safety Assessments
AIR Worldwide	Catastrophe Risk Analysis and Training
Akzo Nobel	Let's Color Program
APTIM	Strategic & Sustainable Solid Waste Management
APTIM	Resilient Power Planning

The AIA provides instruction and volunteers for the building Safety Assessment Program (SAP) trainings; expert architects train licensed design professionals, including architects, engineers, certified building officials and inspectors with the technical expertise in building safety, to provide assistance post-disaster with rapid and detailed assessments of buildings.

A catastrophe risk analysis of the city using AIR's catastrophe models relevant for the city and a written overview of analysis results to support discussion of the catastrophe risk profile. A one-day training to the city staff on the background, use of catastrophe models, and the presentation and discussion of AIR analysis results.

AkzoNobel will carry out Let's Color Programs in cities, which will be custom-designed based on the strategic assessment of the city, space, areas of greatest need, and areas of determined greatest impact.

CB&I will analyze a city's municipal solid waste management practices and identify opportunities to minimize solid waste streams, operationalize efficiencies, and develop an implementation framework for recommended actions.

CB&I will perform a comprehensive assessment of a city's energy infrastructure, supply, and demand, and will identify opportunities to increase the city's power resilience. This assessment is meant to help a city strategically protect its critical infrastructure, including critical assets such as hospitals and those serving vulnerable populations, from prolonged power outages.

In a city with hundreds or thousands of buildings affected by a disaster, it can take weeks, months or even years to properly evaluate public safety and the habitability of structures. Response and recovery time can be dramatically reduced, and safety, technical and building performance issues of buildings can be identified by experts, so that home and building owners are reassured and can move forward.	Never Required	Not Limited
The city government, emergency preparedness, and mitigation managers can use the analysis to identify the asset classes, or the perils that are the primary drivers of the city's risks, to provide risk metrics to inform risk reduction, emergency response, and financial risk transfer decisions.	Never Required	Not Limited
Various factors help a city develop a collective identity, but citizens must be given an opportunity to express that identity. A simple way of doing this is to make our cities more "human" by inspiring an emotional connection through the use of color. Color plays a key in giving people a sense of place, space, and identity; particularly in areas that are devoid of any self-expression.	Never Required	Not Limited
The analysis will allow the community to further understand their solid waste programs and identify opportunities to reduce waste streams, increase alternative energy sources, and identify alternative land uses.	Never Required	5
Insight into a City's electrical grid infrastructure, distributed generation opportunities, water management, power usage, backup power options, demand side management, and overall power supply and demand.	Never Required	5

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APTIM	Problem Properties Services
Arcadis	Coastal and River Basin City Flood Risk Reduction Strategies and Feasibility
Asia Foundation	Training for Small and Medium Business Enterprises
Asia Society	Global Talent Initiative with Fortune 500 Executives
Asia Society	Pacific Cities Sustainability Initiative (PCSI) Annual Conference and PCSI-Relat

CB&I will assess problem properties in member cities, and provide a Toolkit that will outline best practices and provide actionable strategies to return their problem properties to productive use.

ARCADIS will identify mitigation and adaption strategies and provide a roadmap with recommended prioritized actions and cost/benefit data to help coastal cities plan for climate hazards through a high-level feasibility assessment that will help City leaders understand and make the necessary short and longer term resiliency planning and zoning decisions.

The Asia Foundation will provide training, targeted research, and the facilitation of local and regional policy dialog to help small & medium enterprise businesses to improve their own and the city's resilience planning and building, including preparing for disasters, disaster relief and recovery, climate change adaptation and mitigation, and urban planning.

CROs and municipal governments can engage directly with Chief Talent Officers and Heads of Human Resources of Fortune 500 Companies and participate in a network focused on attracting and retaining human capital, including how factors such as city livability, regulatory environment, infrastructure, environmental conditions and lifestyle issues impact their interests.

PCSI is a suite of knowledge sharing and knowledge management opportunities to explore and share urban sustainability strategies among cities across the Asia-Pacific region and cities globally



The creation of strategic action items to address problem properties will combat future risks and make cities more resilient, which may include increased property values, reduced crime, reallocation of capital and operational funds, renewed sense of community pride and a variety of environmental benefits.	Never Required	5
The service helps the city better understand its local physical environment, and seeks to inform a broad audience about local, regional and global best practices around risk based planning and decision-making in vulnerable coastal urban communities, with the goal of increasing public awareness, and to identify routes that develop the optimal adaptation approach.	Never Required	Not Limited
This service is best suited for cities with a high vulnerability to natural disasters, has a high prevalence of SMEs in the city that have low capacity to deal with shocks, a private sector that is not involved in DRM or philanthropy efforts, and cities with weak public-private partnership links.	Sometimes Required	Not Limited
The service best suits rapidly urbanizing second tier cities, and cities with fast-growing markets facing challenges of long-term secure employment opportunities, as well as cities looking to showcase an investment-friendly environment, to learn how to attract and retain a skilled workforce.	Always Required	Not Limited
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AT Osborne	Transportation Infrastructure Program Review and Recommendations
British Council	Enhancing creative and cultural development, skills and enterprise
Build Change	Technical Resources/Training to Improve Building Standards for Houses/Schools
CDIA - Cities Development Initiative for Asia	Pre-Feasibility Study Support

AT Osborne will provide Maturity Scan planning services to help a city build or rebuild roads and railways (heavy and light) and to manage traffic and mobility.

Advisory support to analyse and evaluate creative and cultural development solutions that address a city's resilience needs. Draws on a global track record facilitating creative enterprise, workforce development, and social cohesion.

Build Change works with all stakeholders, including government, contractors, and end users (homeowners, teachers, students) to put in place the technical resources, capacity building programs, data collection systems, financial incentives, and other resources necessary to build and retrofit safe buildings.

CDIA supports the identification and development of urban investment projects in the framework of existing city development plans that emphasize sustainability, pro-poor development, good governance and climate change. CDIA will prepare pre-feasibility studies for high priority infrastructure investment projects, excluding developed countries (e.g., Thailand, Korea and Japan).

The city can use the maturity scan service to help design feasible business cases, perform a peer review of a design or plan, and (recover) projects that are in distress, enabling cities to start (re)building their infrastructure, improve the (public) transport facilities and traffic and mobility strategies.	Never Required	3
City leaders will develop a greater understanding of how culture-based strategies can improve city resilience, increase cohesion, and support sustainable economic growth. Longer-term outcomes range from the development of an increased cultural sector capacity to more creative approaches to policy-making.	Never Required	2
Build Change's services are best suited for cities with interest in increasing resilience of existing or new housing or educational infrastructure. Types of housing include: single family housing, multiple family informal buildings, developer-built multi-family housing projects, social housing, commercial high rise residential infrastructure. Build Change works in emerging nations, areas where informal building is common and/or building standard enforcement is not yet widespread. Build Change usually works with lower income homeowners.	Sometimes Required	Not Limited
Cities should use CDIA services if they have prioritized specific hard infrastructure measures (eg. drainage system, water supply plant) and needs support in developing the project to access external sources. A CDIA pre-feasibility study is usually conducted for projects with expected investment volume of over \$15 million.	Always Required	Not Limited

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Cemex	Action Planning for Urban Solutions
Cisco	Smart + Connected Communities
Cities Alliance	Advisory services for inclusive, multi-sector city resilience p
CityHero.es	Resilience Monitor Communication System

CEMEX helps cities design and form strategies by further developing detailed activities with tangible and measurable objectives. Key sustainability focus areas include mobility & infrastructure, buildings & housing, social development & inclusive business and energy & waste.

Cisco leads workshops with cities to explore potential technology and non-technology based solutions relating to a specific challenge faced by a city. Cisco will provide cities with an assessment of key barriers to success, a list of possible initiatives, and a summary of a jointly agreed plan that includes solution prioritization, a multi-year implementation map with expected impacts and roles and responsibilities of various stakeholders involved in each stage of the project.

Cities Alliance will facilitate access to networks of organised informal workers and slum/shack dwellers, Provide links to experts and practical experience in city resilience strategies, economic growth and gender mainstreaming, provide access to information on knowledge products on secondary cities, environmental planning, national urban policy, land expansion policies, conceptualize and facilitate knowledge exchanges, share good practices on City Development Strategies and slum upgrading.

An IT based system that establishes a direct communication among CROs, volunteers and citizens for mapping, analyzing and acting on cities' risks, to map and inspect hazard exposures and vulnerabilities, update infrastructure conditions, and establish real time communication with the citizens in emergencies.

The service aims to improve cities? sustainability and create inclusive communities by increasing the capacity of built infrastructure systems to absorb shocks, to guarantee durability and low operational and maintenance costs, and to retain their basic function and structural capacity during their full life cycle.	Never Required	Not Limited
The service is suited for cities seeking to solve a specific challenge, such as transportation, air quality, flooding, increasing citizen engagement, making more informed decisions. Cities can better tackle the problems they face with access to more accurate and timely data that Smart + Connected Communities can bring.	Never Required	
The services would best suit cities that are seeking to make systemic change at the policy level, to improve communications between citizens and government, and are looking to approach city development strategies in an integrated and collaborative manner with city stakeholders.	Sometimes Required	Not Limited
CROs and affiliate authorities can access key metrics and analytics that will help with the decision making process, improving the communication and collaboration between neighbors and authorities, helping reduce fatalities and opportunistic crimes during emergencies.	Never Required	Not Limited

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Citymart	Problem Based Procurement
Climate Central	Sea Level Rise and Coastal Flooding Risk Tools and Training
CSA Group	Infrastructure Pre-Feasibility Study
CSIRO - Commonwealth Scientific and Industrial Research Organisation	CityEngines - web-based natural hazards visualization tool
CSIRO - Commonwealth Scientific and Industrial Research Organisation	Technical Assistance to Apply Building Simulation Tools

Runs challenges to help cities use procurement as a tool to source innovative and transformative solutions to meet their needs from global solutions providers.

Climate Central provides training and ongoing support to cities to help them leverage the full range of the Surging Seas Risk Finder's capabilities. Surging Seas helps communities, planners, and leaders better understand sea level rise and coastal flood risks, providing local sea level rise and flood risk projections, searchable interactive maps, community reports, data downloads, and exposure tabulations by postal codes, municipalities, counties, and more.

Planning, pre-feasibility, and conceptual engineering to select cities in North and Latin America, which are vulnerable to rising sea level, storm surges, and economic strain that may be addressed through green and grey infrastructure.

CSIRO provides a web-based tool that can help cities integrate climate adaptation and disaster risk reduction into action plans for resilient cities. Through risk management, it aims to guide city partners to identify options that reduce the impact of climate change and variability.

Cities apply building simulation tools, which are publically available e.g. EnergyPlus, to assess the energy efficiency of building design options for low-carbon development while achieving co-benefit of healthy thermal environment, and provide measurable and quantitative evidences for the assessment of energy efficiency at a city scale.

Useful for cities seeking to reach unknown markets for competitive and innovative solutions, and cities that have failed in previous attempts to solve a problem. Helps cities use procurement in innovative ways to solve problems.	Always Required	Not Limited
Surging Seas serves as a valuable communications and outreach tool for communities seeking to empower a broad range of stakeholders in educating constituents, generating media, and mobilizing for adaptation measures. The tool is useful for city leaders to formulate and begin a vulnerability assessment of the neighborhoods in a city.	Sometimes Required	Not Limited
CSA's pre-feasibility study will provide a city with a clear project definition and assessment of both technical and economic feasibility in order to pursue infrastructure projects that are permissible and fundable, and that will achieve the level of resilience required to support increased economic activity and higher standards of living for their constituents.	Never Required	2
This provides a flexible and specifically tailored support for cities to understand their risks to future climate and natural disasters, and develop action plans for resilient cities.	Sometimes Required	2
This provide flexible tailored support for cities to understand current building designs on the aspect of energy efficiency, low carbon development and healthy building environment, and measurable and quantitative evidences for development of action plans for low-carbon/green cities.	Sometimes Required	2

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Deltares	Climate Adaptation Support Toolbox (AST)
Deltares	Hydrodynamic Modeling for Urban Flood Management
Deltares	CIRCLE -Cascading Impacts of Flood-Related Infrastructure Failure
Deltares	Strategic Scoping Session on Resilient Urban Water Management
DigitalGlobe	High Resolution Satellite Imagery for Land Use Mapping and Modeling

Deltares offers a collaborative climate adaptation planning workshop using its Climate Adaptation Support Tool (AST) to identify and evaluate blue, green and grey measures to reduce the impacts of flooding, heat and drought at a neighborhood scale.

Using simulations from a hydrodynamic flood model (Delft3D), Deltares will conduct a collaborative research workshop to understand the causes of urban flooding and begin to develop strategies to address it.

The CIRCLE tool is used in stakeholder participation sessions on critical infrastructure networks where direct and cascading impacts of flooding and other climate hazards such as drought are identified and visualized.

Deltares will conduct a round-table scoping session and develop a high-level collaborative roadmap on resilient urban water management.

DigitalGlobe will provide cities with satellite imagery that allows for sophisticated photogrammetric processing and three dimensional feature extractions. The imagery also includes a land use/land cover data layer that shows water bodies, vegetation, manmade surfaces that affect flood impact and bare soil/earth where there is no built up area. A basic elevation model of the city will also be compiled for imaging processing.



<p>The tool supports collaborative planning of adaptive measures in existing districts / neighborhoods / streets to strengthen both physical (climate) and social resilience. The tool unlocks knowledge on the wide variety of Low-Impact-Development-solutions allowing participants to create concrete adaptation plans with identified impact metrics. In this way, the tool facilitates collaborative research and stakeholder engagement in a process that may have a broader scope than water and green infrastructure alone.</p>	Sometimes Required	4
<p>As a result of the workshop the city and stakeholders have a better understanding of the functioning of the water system, the causes of flooding and possible measures to reduce flooding. This is essential knowledge enabling the city to take the right actions to reduce flood risk. The knowledge can be used in master plans to increase the city's resilience.</p>	Sometimes Required	4
<p>@Rebecca--this is the "long-term impact" section on the service description. However, it is currently too long to fit here. Can you please reduce to 50 words?</p>	Never Required	4
<p>The roadmap is by definition intended to identify and describe the long-term future development of a resilient urban water management strategy which will reduce the social and economic consequences of flooding.</p>	Sometimes Required	4
<p>Cities can use the images and analysis to inform planning for future growth, plan for and address problems arising from natural hazards, critical infrastructure, public transportation, water scarcity, poverty community security, community growth and more.</p>	Never Required	Not Limited

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Doppelmayr	Cable-Propelled Transit Design Guidance
Earth Economics	Natural Capital Valuation Analysis and Consultation
ELADES - La Escuela Latinoamericana de Desarrollo Local Sostenible y Resiliente	Applied Training Program for Local Sustainable and resilient Development
Esri	ArcGIS Software and Support
EY - Ernst & Young	Emergency Management Advisory Services

Doppelmayr Cable Car offers two levels of design guidance to cities interested in adopting cable-propelled transit solutions such as gondolas, aerial trams, and cable cars as part of their resilience strategy.

Earth Economics will provide cities with a valuation analysis of location-specific natural capital that includes certified values of each ecosystem service in region, and help cities better advocate for natural capital investment and protection.

ELADES provides capacity building, training, technical tools and methodologies to help cities around the areas of disaster risk reduction, incorporating aspects of security, inclusiveness, protection, generation of social and economic assets, and the ecosystems of communities, territories, and nations.

Cities will receive a two-year Esri Departmental Enterprise License Agreement (ELA), and will also receive technical assistance from Esri's staff and an extensive network of business partners and international distributors.

EY can assist the City with developing plans and strategies to leverage its emergency management, insurance, mitigation and disaster grant, planning and preparedness efforts.

Cable-propelled transit solutions require low initial investment costs and provide critical public transportation options to geographically-isolated neighborhoods and communities that are underserved by unreliable or underdeveloped transportation systems. Increasing access to public transit, particularly for poor and vulnerable communities, creates social and economic opportunities which otherwise would not exist.	Never Required	3
Cities should use the services to gain a better understanding of the value of natural assets in their region, in order to make sound natural capital investments and protection, to support critical natural capital initiatives and projects such as watershed protection, open space stewardship, and disaster mitigation.	Sometimes Required	4
The program is suited for technicians, civil servants, local and national government officials (decision-makers), community leaders, business representatives, and NGOs interested in acquiring knowledge and skills in the areas described above.	Sometimes Required	2
All cities can use ArcGIS technology to plan for increasing shocks and stresses to bounce back faster. Whether they face challenges like drought or flooding, economic collapse, or a health epidemic, communities are using ArcGIS technology to prepare ahead of time, operate effectively during events, and recover quickly.	Sometimes Required	5
The service can increase a city's resilience by making it more prepared before, during and after a disaster. It helps cities identify gaps in emergency management plans, understand their insurance policies and coverages, and identify the various source of funding available to respond to recover from or mitigate a loss event, and how to maximize and expedite its recovery.	Never Required	6

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EY - Ernst & Young	Smart Transport Advisory ? delivering multi-modal/operator urban transport
EY - Ernst & Young	Job creation and inclusive growth strategies advisory
EY - Ernst & Young	Intelligent Transport Infrastructure and Asset Information Advisory
Findyr	Hyper-local data, trends and analysis on demand
Fourth Economy	Community and Economic Development Assessment

EY offers a series of workshops with key stakeholders to identify and elaborate upon key transport issues and priorities of a city. Workshops are tailored to the specific transport needs of the city and depend on the status of existing transport projects or programmes.

This job creation and economic advisory offering provides a candidate city with prioritization of industry sectors, underpinned by an action plan that identifies capabilities and programs needed to support job creation and alignment of the local labor and education infrastructure to market needs.

Advice on driving value from transport infrastructure asset data, utilising it for risk management, and business resilience. Can include advice on analytics and big data, data governance, information management, and Building Information Modelling (BIM).

Findyr facilitates and accelerates the gathering of data around city-determined resilience metrics.

The service includes a community and economic development assessment comprised of data analysis, existing plan review, survey and facilitated session to identify possible actions to inform and support resiliency-planning efforts.

The offering is suited to all cities where congestion is an issue, public transport accessibility needs improving, and those where transport infrastructure has been adversely impacted by, or has failed from, different shocks and stresses. The offering will also benefit those cities seeking to improve economic development.	Never Required	4
Job creation and economic advisory analysis and recommendations can help city focus investment on industry sectors (existing, emerging or new) that have the greatest potential to drive job creation and sustainable economic growth. Longer term impact can be accelerated economic growth, diversification and an education, labor and skills infrastructure that can deliver the right jobseekers with the right skills at the right time.	Never Required	3
The offering is best suited to cities with significant transport infrastructure assets where data management and better information on transport infrastructure could support better decision making.	Never Required	4
Gather data and track metrics around actions noted in resilience strategy.	Never Required	Not Limited
This service will position the city to identify issues and opportunities related to community and economic development that can impact resilience efforts. Possible impacts could include integrating workforce development opportunities into project implementation, prioritizing development to support resilience goals, or ensuring that key industries are providing community and environmental benefits.	Never Required	2

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frog design	Human Centered Design for Urban Resilience
GFOA - Government Finance Officers Association	Government Financial Resilience
GIB - Global Infrastructure Basel	GIB SuRe Standard Tool
Give2Asia	Crowd Funding for Municipal Governments
GIZ	Integrated Resource Management in Asian Cities: The Urban Nexus

frog will provide their Urban Design Toolkit (UDT), a workshop-based initiative that takes a human-centered approach to the design of the urban realm. The UDT is a set of activities and methods to enable city and citizens to organize, collaborate, and create solutions for resilience opportunities or problems impacting their community, and develop a roadmap with actionable concepts for cost-effective, impactful efforts.

GFOA provides best practice guidance, consulting, networking opportunities, publications including books, e-books, and periodicals, recognition programs, research, and training opportunities for those in the profession. GFOA has identified 5 tools in particular to help local governments make better financial decisions under conditions of crisis or long-term stressors.

GIB's SuRe Standard tool helps a City to assess the sustainability and resilience value of an infrastructure project. The tool can be used at an early stage of project design or during the construction or operational phases, as a guiding and decision-making tool, and to anticipate the impact of the project on society, the environment, and the economy.

Give2Asia's crowdfunding service enables cities implementing charitable projects in Asia to fundraise for projects amongst their stakeholders in the USA.

This service will help cities understand the problems in their water, wastewater, solid waste, energy efficiency and food production sectors, and help cities understand the potential solutions to ?closing the loop? between water, energy and land use/food security (the Urban Nexus).

The workshop helps a city and its citizens imagine exciting visions that helps all residents understand and engage with resilience. The workshops can be useful for internal (municipal/government) audiences seeking to better understand how to engage with their communities and how to innovate for resilience ? as well as for policymakers needing to figure out a landmark policy or vision to engage directly with citizens.	Never Required	Not Limited
GFOA?s resources and technical assistance are best suited for cities looking to improve their governance structure, helping officials seeking guidance on best practices in areas such as legislation, regulation, business process improvement, financial planning, budgeting and financial management, procurement, and financial reporting.	Sometimes Required	Not Limited
GIB Grading enables project developers to easily and quickly assess the main risks of an infrastructure project at an early stage. The tool is useful for city planners, resilience officers, and public-private partnership directors for designing and prioritizing infrastructure projects. The tool is also helpful for financial officers as an instrument for risk-mitigation and attracting dialogues with investors.	Sometimes Required	Not Limited
The service is helpful for cities that have resilience needs that lack funding, to engage with communities and patrons in the USA that support the cause.	Sometimes Required	Not Limited
The physical as well as the social and economic resilience of the cities will be improved through the implementation of robust and sustainable urban services reducing the vulnerability of the cities and their inhabitants as well as reducing the operation & maintenance costs for urban services.	Never Required	Not Limited

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GNAM - Global Network for Advanced Management	Subject Matter Expertise from Global Network of Experts and Graduate students
GoodCompany Ventures	Climate Ventures 2.0 Innovation Marketplace
ICC - International Code Council	Building Code Development and Implementation Resources
IDB - Inter-American Development Bank	Feasibility Study Technical Assistance

GNAM will actively shape the curriculum on Urban Resilience with the Rockefeller Foundation and 100RC for students within the network. The purpose of the course is to train future leaders in resilience thinking, while offering solutions to problems confronting CROs in the cities across the 100RC network. Faculty and researchers, as part of the Collaborative on Urban Resilience and Effectiveness (CURE), will serve as members of a ?virtual knowledge hub? to offer advice on city problems.

Climate Ventures 2.0 offers a platform to source, accelerate and pilot entrepreneurial innovation to mitigate climate threats and enhance the resilience of cities. CROs can use the platform to find solutions from entrepreneurs.

The International Code Council (ICC) offers cities technical resources and consultation related to the development and implementation of building regulations to address resilience challenges associated with unsafe, unregulated or informal building and construction practices.

The IDB and its component sectors and departments will explore providing advice to cities who are working on feasibility and preparation of resilience projects with the potential to gain access to technical assistance and project financing.



Soliciting in-depth research from a global network of SMEs from GNAM member schools (ad hoc) as well as graduate student consultants (urban resilience course).	Never Required	Not Limited
Cities and local communities facing drought, water scarcity, water quality concerns, and volatile weather patterns will benefit from the kinds of innovations GCV will select. Moving forward, other social sectors will be addressed.	Never Required	Not Limited
Participating cities will benefit from the adoption and/or enforcement of building regulations that will result in buildings that not only withstand natural disasters so that communities may recover from disasters more quickly with less economic impact and loss of life, but also provide higher quality of life, higher performance and safety on a daily basis to benefit inhabitants.	Sometimes Required	4
The system is applicable for any city in Latin America and the Caribbean interested in developing integrated large-scale infrastructure projects	Never Required	Not Limited

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ieg7	Management Pathways for Homelessness - Smart Survey and Case Management Solution
ieg7	Self Service Business License Suite
IGES - Institute for Global Environmental Strategies	Analysis of air quality and climate change co-benefits of transportation p
IHS Markit	Economic Resilience Analysis & Strategy Support

IEG7 provides a smart survey and case management solution which creates an individual plan or pathway for the most vulnerable. Based on the survey responses, an individual plan is developed with managed outcomes.

The Business License Suite provides a single source for citizens to access a City's business license applications and renewals while improving the City's ability to collect revenues and analyze results.

IGES will help develop a transport co-benefits action plan for cities. The plan will quantify air pollution and GHGs reductions from desirable transport policies and steps for implementation

IHS Markit will provide 100RC member cities with data, analysis or insight to better understand their current economic health and industrial composition, drivers for economic growth, and threats to long-term economic inclusion, sustainability, and competitiveness. The research findings will be delivered through an in-person presentation or workshop with the city's CRO and other stakeholders essential to regional and citywide economic development, competitiveness, and long term prosperity.

<p>The service directs city, county, state, federal, and 3rd party resources to help the most vulnerable overcome their health, financial, and social challenges. In addition to improving individual outcomes, it reduced the government's financial burden. The city should expect greater visibility and control over their vulnerable population and greater adoption of available services. Overtime, the dependency on government subsidies should decline as these individual outcomes improve.</p>	<p>Never Required</p>	<p>Not Limited</p>
<p>Business License Suite is useful for city governments who collect their own business licenses or engage with the state for applications, renewals, and collections.</p>	<p>Never Required</p>	<p>Not Limited</p>
<p>The plan will help clarify what are the impacts on air pollution and climate change in cities' transports sector. This will inform the design and implementation of transport policies that are both low carbon and sustainable</p>	<p>Sometimes Required</p>	<p>Not Limited</p>
<p>This service is best suited for cities that are either focused on economic resilience or seek to understand the relationship between other social, environmental, and physical resilience strategies and their city's economic performance over time. While IHS Markit has its own proprietary metro area and county-level data, cities will be encouraged to provide any additional city-level or topic-specific data so that it can be integrated into the IHS Markit analysis, as appropriate.</p>	<p>Never Required</p>	<p>5</p>

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Impact Infrastructure	AutoCASE Cost Benefit and Risk Analysis
Intermedix	Crisis Information Management Technology Assessment and Pilot
International Rescue Committee	Advisory Services for Migration and Displaced Populations
IOBY	Crowd-Resourcing and Training for Community Leaders in Neighborhood Projec

AutoCASE is an automated cost benefit and risk analysis tool used to determine triple bottom line returns associated with infrastructure (e.g. mobility, energy, water, waste management systems/ projects) and building (e.g. administration, healthcare, campus, aviation, warehousing, distribution centers, and commercial office buildings) projects at sizes ranging from small to extremely large (\$500K to 1B+)

The crisis information management technology assessment will help cities assess their resources and identify gaps in their emergency management and public health preparedness requirements and functions.

The IRC will advise cities on best practices to integrate and humanely accommodate influxes of displaced populations into the cities? social, economic, and cultural fabric in a manner that enhances overall resilience of the host city, acknowledging the dynamics of accommodation with host governments, particularly those that oppose long-term integration.

ioby operates an online crowd-resourcing platform that allows neighborhood leaders to organize local capital for their projects, including tax-deductible donations, volunteer muscle, and in-kind donations. ioby?s staff will work with each leader through the entire process, providing trainings in grassroots fundraising and organizing, checking in on the campaign?s progress, and keeping track of successes during implementation.

Best suited for mid-sized to large cities who are seeking to understand, calculate and maximize total value for money achieved from their capital investments. The tool can help the City to prioritize its investments and provide greater transparency in decision making.	Sometimes Required	Not Limited
The crisis information management technology assessment and pilot will allow for efficient coordinating and integrating of all activities necessary to build, sustain, and improve the capability to mitigate, prepare, respond, and recover from threatened or actual natural disasters, acts of terrorism, or other man-made disasters. When done correctly the results should minimize impacts on society including saving lives and protecting property.	Never Required	Not Limited
The integration of displaced populations can enhance resilience by diversifying and increasing the workforce, improving social cohesion, and avoiding the negative effects of exclusion. The IRC can help kick-start a long-term strategy by recommending short-term, critical actions to better respond to displaced populations as an opportunity rather than a burden.	Sometimes Required	Not Limited
By offering ioby's platform as a tool for neighbors to bring their ideas for stronger and more sustainable neighborhoods to life, this will enable CROs and city agencies can unlock new and untapped financial and social capital for resilience projects.	Sometimes Required	Not Limited

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iParametrics	Disaster Response and Recovery Planning, Assessment and Related Strategies
Jacobs	Resilience Sprint Start Workshop & Action Plan
Janellis	City-wide Emergency Management Expertise and Tools for Preparation and
Knowledge Hub	Online Network for Digital Collaboration
Manchester Bidwell	Feasibility Study and Fundraising to Develop a Job Training Center

iParametrics will conduct an assessment of the city's disaster recovery plans and provide a report with a high-level assessment and roadmap of prioritized recommendations as to how the city may improve its recovery capabilities from all types of shocks.

A three-day facilitated workshop that advances one of the City's Resilience Strategy initiatives; the end product is a high-level strategic plan detailing specific actions, milestones, partners, responsibilities and metrics for implementation.

City-wide emergency management expertise, tools and a portal that provides information for organizations operating within the city; available on mobile devices to help prepare for and respond to, city-wide emergency events.

Digital collaboration platform which the City can use for cross-sector discussions, knowledge sharing, collaborative work amongst stakeholders, and sharing of good practices, both locally and globally.

The MBC model helps to alleviate a chronic stress of high unemployment and low school graduation rates. Providing skills and employment breaks the cycle of unemployment and removes the individual's reliance on public resources. Ultimately, the cost to education a student utilizes fewer resources than continuing a cycle of public reliance.

Cities will engage in a concise survey and interview(s) to more fully scope their specific needs. The survey and interview(s) will also help determine the maturity of the City's current strategies and plans for disaster recovery.	Never Required	Not Limited
The Resilience Sprint Start will advance a specific initiative, capitalizing on the momentum already established by the City's Resilience Strategy. It will demonstrate the City's commitment to action by providing a clear action plan focused on implementation that remains integrated with the overall objectives of the Resilience Strategy	Never Required	2
Many cities around the world have already experienced "shocks" and continue to monitor a range of known and unknown threats. Emergency management tools and a portal that embeds key emergency management information into the business community ensures organizations are prepared and; can "bounce back", minimize potential loss of life and maintain economic stability and public confidence.	Never Required	Not Limited
Over time, knowledge sharing can generate a range of benefits including cost savings, less duplication of effort, upskilled employees, consistency of approach and pooling of resources. This makes stakeholder collaboration and building a knowledge legacy easier, broadening and deepening the impact of a city's resilience work.	Never Required	Not Limited
The model helps to alleviate a chronic stress of high unemployment and low school graduation rates. Providing skills and employment breaks the cycle of unemployment and removes the individual's reliance on public resources. Ultimately, the cost to education a student utilizes fewer resources than continuing a cycle of public reliance.	Sometimes Required	Not Limited

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Mastercard	Digitization of Payments Services
Meridiam	Innovative Infrastructure Finance and Project Delivery Support
MFO - Microfinance Opportunities	Financial Education for Marginalized Populations
MIT Climate Colab	MIT Climate CoLab
Navigem	Smarter City Governance Decisions Through Data Aggregation and Analysis

Helps a city realize the benefits of payments digitization, and in some cases enable citizens to manage their finances more effectively through financial education and with the ability to receive and transmit payments to governmental bodies, thus becoming part of the mainstream in society.

Meridiam will use its experience to offer case studies and analysis to support the discussion of delivery methods (such as Public ?Private Partnerships) to procure essential infrastructure projects. Input provided would include: Project Identification; Development Support; Market Analysis; and Exploration of Project Financing.

Allows city access to its Financial Education Core Curriculum (FECC), a comprehensive financial education curriculum used by various stakeholders to build capacities and financial awareness among lower income populations. Additionally, MFO will commit 20-30 hours of work with five Cities throughout the duration of the engagement to develop design a financial inclusion strategy/ campaign.

Its an online crowdsourcing platform where citizens and experts work together to create, analyze and select detailed proposals for what to do about climate change and urban challenges, through the running of contests.

NavSustain? Smart City solution is a web-based data aggregation and analysis software designed to address urban challenges at the system level and inform and bolster governance solutions to make cities more efficient, livable and sustainable.



Digitization of payments for governments and its citizens leads to cost savings, process efficiencies, financial inclusion, transparency, corruption and funds misuse reduction, enables a city to expand economic activity to reach its full potential and enables citizens to manage their finances more effectively and become part of the mainstream in society.	Never Required	Not Limited
Through Meridiam's support and proposals on contractual and funding structures and approaches to project management focused on delivery, cities will be empowered to study, design and/or implement financially attractive resilience infrastructure projects.	Never Required	Not Limited
Help their lower income resident understand fundamental elements of personal (and business) finance. This will enhance local economic resiliency.	Sometimes Required	5
Cities can engage a large audience in generating and selecting creative ideas to address climate change and the urban challenges.	Sometimes Required	Not Limited
Navigem offers a baseline platform/dashboard for each city, using data available within the city; from studies and surveys; and/or data emanating from smart devices and other available data sources, to enhance operational visibility, measurability, efficiency and effectiveness.	Sometimes Required	Not Limited

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Neighborland	Participatory Planning Platform
NOA - National Observatory of Athens	EXTREMA ? Emergency notification system for extreme temperatures

Neighborland is a technology platform that takes participatory planning forums online, enabling cities and civic organizations to more effectively collaborate with citizens. Neighborland enables cities to facilitate public outreach at workshops, collect ideas through social media, map ideas and solutions, and more.

The city will receive a customized mobile app for its citizens with their heat stress risk, recommendations for actions to take, and routing instructions to the nearest cooling center. City officials will get web access to a dashboard to view a citywide heat hazard map and manage changes to cooling center locations.

<p>Cities should use Neighborland to create a participatory planning process that involves broad public engagement, and is useful for collecting and drawing insights from qualitative data to create a robust level of community engagement.</p>	<p>Sometimes Required</p>	<p>Not Limited</p>
<p>EXTREMA will raise awareness, facilitate prevention, improve risk communication, and increase urban resilience. Actionable knowledge regarding extreme temperature events will enable municipal authorities to improve city practices on risk assessment, coordination and management. EXTREMA aims to help raise public awareness about heat risks and thereby increase community resilience. It will help mitigate the extreme temperature impacts by enhancing the capacities of the people to anticipate them and adjust their actions appropriately. Over time, the City will be able to identify areas that are most at risk to heat hazards. Detailed data collection and analysis within the 1 km hot spots could then be used for targeted mitigation efforts, such as tree plantings and green roofs. As mitigation efforts are undertaken, the City will be able to measure the success of these interventions in reducing high temperatures.</p>	<p>Sometimes Required</p>	

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Ordnance Survey International	Geospatial Maturity Assessment
Pacifico	Communication and Awareness Raising Campaign Design
Palantir	Human-driven, Machine-assisted Analysis
PDA - Population and Community Development Association	Family Planning, HIV/AIDS Awareness

A two-day on-site review of a city's geospatial data capabilities and management, providing a report of the city's geospatial and organizational strengths and weaknesses, highlighting where investment should be directed to improve resilience planning.

Pacífico supports cities in the design of communication campaigns to spread prevention messages and raise awareness on multiple threats, such as: pollution, environmental problems, earthquakes, floods, traffic.

Used in data integration and mapping. The module brings together data sets from critical assets, utilities, built environment with weather conditions, as well as datasets from the public health and public safety sectors, onto one interface in order to better identify issues, patterns and trends, and solve for problems.

PDA can provide guidance on how to advocate for and establish, city family planning and HIV/AIDS education programs. Campaigns will be designed to address sexual norms of behavior in society, and will target people involved in the sex industry, young people, and the public in general.

<p>Achieving a common operating picture enables a city to carry out extensive and accurate scenario and simulation planning; track, control and respond to dynamic fast-moving emergency situations; and review and learn lessons from both simulated and real events and situations. Improving service delivery can save money while providing citizens with a better user experience and improved quality of life. Identifying vulnerable populations and infrastructure enables the city to create plans that address specific problem areas. Maps with good data are a powerful communication tool, conveying information more effectively than words alone. They can be used to engage and educate stakeholders and the public.</p>	<p>Never Required</p>	<p>Not Limited</p>
<p>The service is particularly useful for high-risk areas with multiple vulnerabilities, where current prevention and preparedness messages are not effective. This may include vulnerabilities to earthquakes, landslides, hurricanes and flooding, or recurrent stresses including public health problems, environmental stewardship.</p>	<p>Sometimes Required</p>	<p>2</p>
<p>Provides way for cities to quickly gather and integrate information about conditions before, during, and after a major event. Allows cities to complete tasks in minutes rather than hours or days, reducing time required to identify when, where, how problems occur.</p>	<p>Never Required</p>	<p>Not Limited</p>
<p>This service is best suited for cities in South/South east Asia with rapidly growing populations and risk of rising sexually transmitted disease rates and are seeking to raise public awareness and practical help for family planning.</p>	<p>Sometimes Required</p>	<p>Not Limited</p>

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Perkins Eastman	Architectural and Urban Design Services
R20 - Regions for Climate Action	LED Streetlight Retrofit Program
R20 - Regions for Climate Action	Waste Management and Recycling Program
RapidSOS	PSAP Integration
RBD - Rebuild by Design	Research + Design + Collaboration : 3 Day Workshop

Perkins Eastman will conduct a one-day design workshop and provide 60 hours of design services resulting in a final report with recommended actions to address a community built environment challenge such as climate change adaption for waterfront communities or planning for aging communities.

R20 has created a comprehensive survey for cities interested in retrofitting their streetlights to LED lighting. Experts will provide cities with an analysis of the survey and suggested strategy for project implementation, and assist in creating a financial model and identifying technology partners to work with the city.

R20 has created a comprehensive survey for cities interested in waste reduction strategies. Experts will provide cities with an analysis of the survey and suggested strategy for project implementation, and assist in creating a financial model and identifying technology partners to work with the city.

RapidSOS will upgrade the city's 9-1-1 software enabling the 9-1-1 center to receive precise location information for 9-1-1 calls.

Rebuild by Design works with the city to identify stakeholders and experts that work together through the course of a 3 day workshop to uncover the depth and interdependence of the problem, and collaboratively develop a solution. The breadth of stakeholders depends on what the problem is the City is trying to solve, but generally targeting 40-50 participants in a workshop will be sufficient.

Cities can develop implementable ideas and strategies that make them more resilient in the face of climate change, be positioned to better support public and community services for local residents and visitors, include creative programming to create vibrant environments and neighborhoods that leverage the city's uniqueness and investments; and generate consensus, among key stakeholders and public agencies	Never Required	2
Cities who are seeking to retrofit their network of streetlights that have a good knowledge of their current streetlight inventory are best suited to use this service.	Sometimes Required	Not Limited
Cities who are seeking to improve their waste reduction strategies are best suited to use this service.	Always Required	Not Limited
According to the FCC, 10,120 lives are lost annually due to the lack of data available to 9-1-1. RapidSOS enhances cities' emergency services by getting precise location and rich data directly to 9-1-1, reducing response times (up to 5 min) and improving survival rates (2-10%).	Never Required	Not Limited
1. Have a better understanding of the identified issue as well as the multiple perspectives who are connected to the issue, which can inform future initiatives or phases of work. 2. Create capacity within government to work better with stakeholders. 3. Train governments in a methodology that they can be applied to future initiatives without the help of Rebuild by Design.	Never Required	Limited

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RBD - Rebuild by Design	Workshop Series to Enhance Stakeholder Engagement
RBD - Rebuild by Design	Research and Design: Addressing Challenges for a Discovery or Geographic Area
Repowering	Community Energy Program Advisory
Resiliency Advisors	Ready Responders

RBD will use a collaborative process to identify and articulate a goal or set of goals that the city hopes to achieve with this workshop series. Rebuild will then work with the City and local partners to co-design a process to achieve these goals by evaluating a City's past engagement strategies. The process should be inclusive and help the city generate support and enhance decision-making.

Rebuild by Design works with the city to identify stakeholders and experts to uncover the depth and interdependence of vulnerabilities and opportunities in a specific geographic or discovery area, and collaboratively develop a solution. This process is best applied to a multi-faceted problem that does not fit neatly into one particular sector, a problem that could benefit from design-based solutions, or one that requires broad outreach.

Repowering offers advisory to cities on designing and delivering community energy programs that combine social works programmes with community infrastructure cooperatives.

Experienced disaster-relief responders are deployed to areas in the midst of disaster crisis. All team members dispatched have been trained in a variety of disaster preparedness programs.



Co-Designing an engagement process will give the city the tools and relationships it needs to enhance its outreach across diverse communities. The city will have an improved understanding of how they can conduct more impactful engagement and the framework to apply that understanding to a discrete issue, that can be iterated and replicated.	Never Required	Limited
The City will have: 1. A better relationship with the stakeholders involved. 2. A better understanding of the multiple perspectives who are connected to the neighborhood which can inform future initiatives. 3. Created capacity within government and community leaders 4. Created a replicable template that can be used in other neighborhoods 5. A shared priority for policy and budget	Always Required	Limited
Cities will gain the knowledge to develop and deliver community-focused, locally-owned clean energy programs, which could include a community gardening component. Through the implementation of this citizen-inclusive model, cities will see broader benefits such as activation of vacant lots, provision of local food sources, and enhanced greening/biodiversity, and also build community cohesion and social resilience through local ownership, training and youth mentoring. The programs will also provide reliable revenue streams and secure power suppl	Always Required	4
Citizens train to survive unharmed respond as helpers rather than victims during disasters. By training spontaneous volunteers. They alleviate the chaos/confusion that can arise between community members and official responders.	Always Required	Not Limited

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Resiliency Advisors	Leading and Managing and Training Programs
Resiliency Advisors	Disaster Volunteerism Safety Training
Resilient Analytics	Infrastructure Risk & Adaptation Tool ? Financial Risk Snapshot
RMS - Risk Management Solutions	Catastrophe Modeling
RS21 - Resilient Solutions 21	Resilience Spectrum Dataset Combination and Problem Visualization

WCC's Leading and Managing training prepares local leaders to coordinate their constituents in the event of a crisis. Organizations and leaders evaluate their agency's own readiness and capability to use their facility(s) to serve the community in the event of a disaster.

This ensures the physical and mental health of those seeking to emerge as disaster volunteers when crisis strikes. Cities understand disaster management, physical and emotional hazards of volunteering, ways to address hazards.

IPSS is a software modeling tool that provides an engineering-based, quantitative assessment of future climate change impacts to transportation and building assets to support planning decisions. The analysis provides cities with financial risk figures for a "do-nothing" approach to climate change, adaptation options to address identified risks, and financial comparison of a proactive investment strategy versus the "do-nothing" approach.

RMS catastrophe models enable a city to better quantify and manage risks due to natural hazards, infectious disease, terrorism and cyber technology. RMS models leverage a city's exposure data to provide detailed, science-driven analytics to support risk comprehension, quantification and reduction.

The RS21 Resilience Spectrum is a collaborative, human-driven technology that allows cities to design resilience solutions by visualizing complex, multi-dimensional issues on a city-level scale. The "Spectrum" combines layers of social and physical geospatial data sets with design thinking to pinpoint targeted solutions.

This grassroots approach expedites services to disaster survivors and reduces the burden on traditional first responders. While other programs train groups to deploy outside of their communities, WCC enables local groups to respond as their own entities from within affected areas.	Always Required	Not Limited
Cities mitigate unintentional negative impact disaster response work can have on its volunteers, thereby reducing the number of secondary victims in disasters.	Always Required	Not Limited
IPSS is useful for cities who identify road and/or building infrastructure as a critical asset for resilience planning. IPSS can identify vulnerabilities and appropriate adaptation interventions to improve resilience and reduce lifetime costs. Additionally, it can help with budget planning by estimating the fiscal cost associated with climate change impacts on infrastructure assets	Never Required	Not Limited
Helps cities understand risk, prioritize mitigation investments, analyze risk financing schemes, respond to disasters by rapidly quantifying expected damage and direct allocation of resources.	Never Required	2
The RS21 Spectrum allows cities to understand complex problems that have physical, social, and economic dimensions. The process allows them to simulate and test different types of solutions, allowing them to prioritize efforts based on cost, effectiveness, and feasibility. The Spectrum also provides CROs a deep level of analytic rigor to justify plans, projects, and funding requests.	Never Required	Not Limited

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Sam Schwartz	Urban Mobility Organizational Capacity Workshops
Sandia National Laboratories	Shocks and Stresses Risk Assessment
Save the Children	Child Poverty and Rights Protection
Save the Children	Child Health and Nutrition

Sam Schwartz will structure a workshop around the key internal challenges the City is facing in implementing their agenda for a resilient and equitable, multi-modal transportation system. Findings and recommendations will then be synthesized into a summary with near-term strategic actions the City can take to jump-start their progress in mobility innovation.

Computer simulation and modeling to evaluate shocks and stresses a city is most vulnerable to, through a collaborative, scientific decision-making process.

Save the Children provides services to develop and implement programs around issues such as: bolstering child rights; child protection from abuse, neglect, exploitation, and violence; skills development and capacity-building programs to improve youth employment opportunities.

Save the Children works with families, community groups, local governments and NGOs to strengthen local capacity to protect vulnerable children, prevent the spread of HIV, and care for people living with HIV and AIDS in their communities. Save the Children also works to reduce high levels of stunting by implementing stunting prevention programs addressing WASH, economic empowerment and behavior change and nutrition sensitive agriculture.

<p>Cities have begun articulating their new vision for mobility, but most cities are still facing significant challenges in implementing their vision due to structural challenges. In the long-term, this Service Offering will put the City much further along in its efforts to transform its transportation system, bringing agency structures, funding priorities, implementation and outreach methods, statistical and spatial data analysis, and messaging into alignment to increase organizational capacity to plan, design, implement (through both near-term and longer-term methods), operate, maintain, and evaluate multi-modal improvements.</p>	<p>Never Required</p>	<p>2</p>
<p>"Cities concerned with multiple potential shocks and stresses that need to prioritize city efforts due to limited resources. The process ensures the city understands its particular set of risks and can generate cost-effective risk-mitigation plans"</p>	<p>Sometimes Required</p>	<p>Not Limited</p>
<p>The service is best suited for the Department of Education as well as the Department of Social welfare at all levels in all city types in South, South East, and East Asia.</p>	<p>Sometimes Required</p>	<p>Not Limited</p>
<p>The service is best suited for the Department of Education as well as the Department of Social welfare at all levels in all city types in South, South East, and East Asia.</p>	<p>Sometimes Required</p>	<p>Not Limited</p>

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Save the Children	Early Education Capacity Building
SeamlessGov	Form Digitization and Automation
Siemens	Infrastructure Opportunity Assessment (IOA) for Transport, Energy and Buildings
Singapore ETH Zurich Centre (SEC)	Future Cities Laboratory & Future Resilient Systems
SMART - Singapore-MIT Alliance for Research and Technology	SimMobility - Integrated Transportation Simulation Platform

Save the Children provides training to parents, teachers and communities in the form of manuals, reference materials, workshops, and/or mentoring through an integrated systems approach which supports, complements, and bolsters the government's capacity to ensure accessible, quality education at the preschool/ early childhood and primary school levels.

SeamlessDocs is an online form and eSignature solution that works with cities to automate and digitize the entire form process, from form creation to form storage. The solution will convert existing PDFs into smarter online versions that can be submitted from any computer, tablet, or mobile with eSignatures, attachments, and payments.

Siemens will provide an Infrastructure Opportunity Assessment (IOA) report to 100RC cities identifying how technology could positively impact the resilience of local infrastructure, focusing on specific recommendations within the energy, transport and building efficiency sectors.

The service provides an integrated planning and design approach that engages stakeholders on cultural, social and economic aspects of a proposed infrastructure strategy or project, building on inter-disciplinary expertise that includes infrastructure, built environment, utilities (waste, water and energy), housing and transportation.

SimMobility integrates various mobility-sensitive behavioral models with scalable simulators to predict the impact of mobility demands on land use, transportation networks, intelligent transportation services and mobility impacts. The platform enables the simulation of the effects of a portfolio of technology, policy and investment options under alternative future scenarios.

The service is best suited for the Department of Education as well as the Department of Social welfare at all levels in all city types in South, South East, and East Asia.	Sometimes Required	Not Limited
Paper forms are not sustainable, and they do not promote efficiency within a City agency. Online forms provide a greater value to citizens while allowing the City to process forms in a more expedient manner.	Never Required	Not Limited
The IOA Report will provide recommendations to enable cities to deliver a higher quality of life for residents through improved infrastructure. IOA results can feed directly into the city's resilience strategy and provide planners with infrastructure delivery targets in the energy, transport and building efficiency sectors.	Never Required	4
The service is useful to rapidly urbanizing cities and regions, in providing planning and design guidelines, policy recommendations, implementation strategies, guidance on planning support tools, case study reports, and pilot project support.	Never Required	Not Limited
Having a simulation tool for decision making allows city's planning agencies, transportation planning and operation authorities and even technology actors to comprehensively and quantitatively evaluate the impacts of different transportation solution and scenarios on human choices, under an uncertain future.	Sometimes Required	Not Limited

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SMART - Singapore-MIT Alliance for Research and Technology	DynaMIT (Dynamic Network Assignment for the Management of Information
Social Finance	Pay for Success Advisory Services
Social Intelligence Institute	Building Social Resilience
St. Bernard Project	Pre-disaster Resilience Training
Stantec	Advisory and Technical Support for Water and Infrastructure

DynaMIT is a simulation based Dynamic Traffic Assignment tool that provides short term traffic state predictions of the transportation network. DynaMIT can be used within traffic management systems to provide predictive travel time information to network users and help mitigate congestion under both recurrent and non-recurrent scenarios.

Social Finance is offering advisory services to help cities assess the feasibility for PFS projects in their jurisdictions, and map next steps to design and execute a PFS transaction.

Social Intelligence Training, delivered either through a self-administered internet training platform or in-person workshops, is designed to help enhance awareness of the value and complexity of social relationships. The training increases the capacity of individuals and groups to respond flexibly to challenges faced in building and sustaining social ties.

SBP trains homeowners and small to midsize businesses to build financial resilience and develop business continuity capacity. The engagement with each community covers approximately 20 sessions training 1000 homeowners and 125 small businesses. Sessions are one hour and include resilience checklists and resource guides.

Advisory and technical support services to assist or guide cities in further assessing and prioritizing water and infrastructure-related focus areas, and provide guidance on a range of institutional and financial issues important to successful implementation of the City Resilience Strategy.



The deployment of DynaMIT facilitates the management of traffic congestion by effecting more efficient commuting decisions. In the long term, DynaMIT can further goals of sustainability through the reduction of traffic congestion, emissions, adverse environmental impacts and the improvement of network reliability.	Sometimes Required	Not Limited
The services are best suited for cities that have a clear social issue or need that needs addressing, offering them an opportunity to continue its commitment to fiscal responsibility while reaching underserved populations in programs with demonstrated results, and sharpen focus on the costs of the status quo versus the benefits of intervention in a city.	Sometimes Required	Not Limited
By fostering community and family ties, managing inclusive and equitable growth, and preparing young people to be responsible and productive citizens who can become leaders at work and in their neighborhoods, cities can continue to function with minimal disruption, even thrive, under extreme and unexpected economic, social, and environmental stressors.	Sometimes Required	Not Limited
The training was designed for communities vulnerable to damage from severe wind or flooding where awareness and/or uptake of mitigation measures and insurance are lacking. Target beneficiaries are homeowners and small to mid-size businesses owners.	Never Required	5
A city should use service to assess environmental and infrastructure-related focus areas in more detail and begin developing or executing detailed implementation plans for its City Resilience Strategy. Particularly well suited to support cities that need to manage significant water-related risks in the context of broader urban planning, infrastructure and economic development priorities.	Never Required	5

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Streetwyze	Community Mobile Web-App
Swiss Re	CatNet® Natural Hazard Mapping Tool
The World Bank	City Creditworthiness Initiative
The World Bank	Building Regulatory Capacity Assessment
TNC - The Nature Conservancy	Resource Investment Optimization System Watershed Management Software
TNC - The Nature Conservancy	Coastal Resilience

Streetwyze gives local, regional and national leaders real-time, two-way input and feedback on resilience from their most important constituents: community-members. Streetwyze makes data more accurate, accessible, and allows community-members to act as ?information catalysts? - capturing place-based data, priority areas and digital narratives. Ultimately, the platform democratizes data and decision-making.

Natural hazard web tool - local and regional. Can determine what types of hazards a city faces, how often and how badly city is affected

Training program and technical assistance in revenue management, climate smart capital investment planning, debt financing strategies, and building an enabling environment for sub-national finance.

The World Bank offers a Building Regulation Capacity Assessment to support cities in identifying regulatory gaps in land use and building construction and present tangible solutions to close such gaps. Solutions will be presented as a set of recommendations to strengthen institutional capacity and develop regulatory instruments that promote resilience and sustainable urban development.

Software tools and technical assistance. Standardized, science-based approach to watershed mgmt. Designs investment portfolios showing where investments will be most cost-effective, feasible, and benefit investors.

An approach and online decision support tools used to guide decisions to reduce ecological and socio-economical risks of coastal hazards, and develop risk reduction solutions. Addresses storm surge, sea level rise, natural resources, vulnerable communities and assets

Streetwyze is best suited for cities interested in connecting with communities, getting real-time feedback, moving toward transparency/collaboration, and sharing information to foster innovative thinking and build more resilient, healthy, and strong cities.	Sometimes Required	Not Limited
Cities can visualize and assess their natural hazard unique risk profile and exposure	Never Required	Not Limited
Help senior financial officials in cities to master the underpinnings of creditworthiness. Help cities increase the credit rating of cities so they can get to a place to issue bonds.	Never Required	\$
The recommendations made in the final report will inform actions taken by the city to strengthen its resilience through building and land use regulatory improvements. The result will be a more effective and efficient regulatory framework at the city-level that promotes compliance with relevant building codes and standards and ensures sounder quality control mechanisms for construction on the ground.	Never Required	Not Limited
Suited for government agencies to develop plans within their budgets to maximized desired water benefits. Cities identify best locations for protection and restoration activities to max. ecological ROI	Sometimes Required	Not Limited
Provides cities with an organized approach to decision making to coastal resilience, especially in regard to coastal hazard mitigation, restoration, post-storm redevelopment planning.	Sometimes Required	Not Limited

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TNC - The Nature Conservancy	InVEST Ecosystem Mapping and Valuation Software
TNC - The Nature Conservancy	Climate Wizard Web Tool
TNC - The Nature Conservancy	Urban Water Blueprint
Transform Finance	Technical Advisory Services
Trimble	eCognition Classification Software
UC Berkeley Center for Catastrophic Risk Management	Problem Formulation Workshop

A suite of software models and technical assistance to help cities quantify, visualize, compare delivery of ecosystems under different scenarios of land, water, marine uses. Evaluates trade-offs for alternative management choices

Web tool for cities to assess how climate has changed over time and project future changes in a given local/regional area. Tool produces maps of past and projected temperature, precipitation trends, summary statistics, trends, GIS data

The Urban Water Blueprint analyzes the state of water in more than 2,000 watersheds and 530 cities worldwide to provide science based recommendations for natural solutions that can be integrated alongside traditional infrastructure to improve water quality.

TF will work with CROs to understand the capital needs of their city's resilience strategy, and provide advisory services and technical assistance to develop and implement a financing plan for selected initiatives. TF will provide cities with high-level recommendations including methods to finance the implementation of the city's resilience strategy and possible commitments from financial institutions or philanthropy.

eCognition Essentials is a remote sensing classification software that that simplifies aerial image processing for local and regional environmental analysis and allows users to quickly produce high-quality maps ready for use in any Geographic Information System (GIS).

Experts in the fields of engineering, social science, medicine, public health, public policy, and law will help cities see the larger systemic contexts of organization problems, lay the groundwork for intra- and inter-organizational collaboration, and apply experience from a wide variety of sectors to cross-cutting issues.

Suited to inform city policy and program designs- eg. Land/marine use plans, environmental assessments, payment for ecosystem services, climate adaptation strategies, mitigation and offsets.	Sometimes Required	Not Limited
Enables cities to visualize and communicate the impacts of climate change across the globe - to technical and non-technical audiences alike.	Never Required	Not Limited
City and utility leaders who embraced both natural and engineered water infrastructure will not only meet future water demand; they will reshape our planet's landscape for the better.	Sometimes Required	Not Limited
This service is best suited for cities interested in exploring innovative ways of financing resilience strategies. For example, a city may be interested in increasing the availability of distributed renewable energy generation and wishes to explore ways of engaging private capital to finance such efforts.	Sometimes Required	Not Limited
The service is useful for cities to rapidly assess existing conditions on the ground and classify environments (eg. water, vegetation, man-made objects) for risk assessment, disaster response, urban planning.	Never Required	5
Cities can use the service to help improve their problem formulation processes and help understand how to work across organizational silos. The service can be useful for cities looking at problems in areas such as public safety, robust infrastructure for water, waste, energy, and transportation.	Always Required	Not Limited

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Urban Land Institute	Land Use, Planning, and Development Advisory Panels & Report
US DHS - US Department of Homeland Security	Infrastructure Assessment and Risk Management
US DHS - US Department of Homeland Security	Cyber Assessments and Services
US EPA - U.S. Environmental Protection Agency	CANARY Water Contamination Warning System
US EPA - U.S. Environmental Protection Agency	Community Air Quality Monitoring
US EPA - U.S. Environmental Protection Agency	Green Infrastructure Strategies

The Urban Land Institute (ULI) offers the expertise of its 40,000 land use professionals to deliver 2 types of advisory panels for 100RC cities facing resilience-related land use planning challenges ? local Technical Assistance Panels, and national Advisory Services Panels.

DHS/NPPD offers assessment and risk management services to cities to enhance the security and resilience of their critical infrastructure, and support response and recovery operations and planning.

NPPD provides cybersecurity assistance to partners in local government through three primary mechanisms: voluntary cyber assessments, information sharing, and incident management support. NPPD provides two primary forms of cyber assessments: organizational assessments that help evaluate the posture and readiness to manage and respond to cyber incidents, and technical assessments of cyber vulnerabilities.

The CANARY contamination warning system software is designed to enhance the quality of drinking water systems through the rapid detection of contaminated water, enabling cities to reduce human exposure to contaminants harmful to health.

Air quality monitoring technical assistance for planning, sourcing, and implementing a lower cost alternative to regulation-standard monitoring systems, and assistance for analyzing air quality data.

EPA will provide technical assistance to cities with projects focused on implementation of green infrastructure. Resources include best practices, assessment tools, case studies to educate on GI and low impact development (LID)

Land use decisions can enhance or undermine social, environmental, and economic resilience in cities. Drawing on the diverse expertise of ULI's membership, ULI Advisory Panels offer unbiased, strategic perspectives on complex land use challenges. Cities receive pragmatic recommendations which can shape future policies, plans and development decisions for the better.	Always Required	Limited
These services help the city be better prepared to protect its critical infrastructure, from Emergency Action Planning/Security Planning (EAP/SP), emergency response/reference, employee orientation training, table top exercises, vulnerability identification, etc.	Sometimes Required	Not Limited
These services help the city be better prepared to protect its critical infrastructure from cyber threats. These services enhance a city's situational awareness to cyber threats as well as enhance the security posture for critical infrastructure owners and operators and the overall community.	Sometimes Required	Not Limited
The software will be helpful to cities looking decrease the impact of contamination incidents to public health, such as minimizing the risk of waterborne diseases, or contaminated source water entering drinking water systems. It will also help to reduce costs associated with water contamination.	Never Required	Not Limited
Useful for long-term measurement of air pollution and weather, providing data on local air quality at places where local communities gather, serving to increase environmental awareness.	Never Required	Not Limited
TA will help address technical, regulatory, and institutional barriers to green infrastructure, and build community capacity by sharing lessons learned.	Never Required	Not Limited

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US EPA - U.S. Environmental Protection Agency	Health Impact Assessment
US HHS - US Dept of Health & Human Services ASPR	Now Trending -- Web Based Tool
Veolia	Water, Energy, and Waste Nexus Workshop
what3words	Location reference and address system
Wood	Critical Asset Data Management

Health Impact Assessment (HIA) is a decision-making tool that assists stakeholders and policy-makers in understanding the public health consequences associated with a plan, project or policy. This will help leaders consider the trade-offs among human health, ecosystem services, economic vitality, and social equity.

Web-based tool that allow public health practitioners to effectively track twitter trends in illnesses, diseases, and natural disaster topics.

Veolia will conduct a 1-2 day workshop addressing resilience challenges related to water, energy, and/or waste systems and performance solutions, the connections between these, and the associated consequences related to social cohesion, urban planning, public health, and digital services by identifying solutions to improve these services and developing an action plan to implement the solution(s).

what3words (w3w) has developed a fixed, global grid of 57 trillion squares with corresponding 3 word address for every 3x3m square which will provide cities with location referencing and addressing for poorly or inadequately addressed cities, notably informal settlements.

Amec Foster Wheeler can help a city identify, prioritize and track key critical city assets that are most vulnerable to shocks and stresses. Amec Foster Wheeler draws on experienced local managers and geographical reach to support the engineering technology needs of a city.



HIA is a tool that can be used to enhance a policy/intervention (e.g. green infrastructure, transit design, energy programs) under consideration, to maximize the benefits (safety, walkability, reduced respiratory illness, heat-related illness, water-borne disease) and minimize adverse consequences. It can be applied to a wide variety of community planning or policy actions including zoning changes, transit oriented development, water and wastewater infrastructure and emergency response.	Never Required	Not Limited
Provides an easy way to include social media data into public health mission without putting forth limited resources to make sense of data. Cuts through noise and large volumes of Twitter data and gets to the heart of conversations about health in the community.		
Solutions generated from the workshop will increase the health and safety of the population, reduce damage and associated costs, and improve the competitiveness of a city by insuring business continuity, and lead to higher-performing and more responsive operations, resulting in budget savings that can contribute to financing the necessary investment for improved resilience.	Sometimes Required	Not Limited
Primarily, providing an address for everyone in the city. Secondly, during an emergency or a disaster 3 word addresses remain constant in the face of changing landmarks or physical addresses, improving safety and security for affected/ displaced residents.	Sometimes Required	5
Useful for improving asset data management for departments within a municipality, such as Public Works, Water Resources, Transportation and Land Records departments. These services can be utilized to identify and track within a database their critical assets that should be managed to improve resilience.	Never Required	Limited

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Wood	Extreme Weather, Marine, and Flood Forecasting
Wood	Pre-Feasibility/Feasibility Study Support
World Bank Treasury	Enhancing Municipal Finance Resilience
WWF - World Wildlife Fund	Earth Hour City Challenge
WWF - World Wildlife Fund	Green Recovery & Reconstruction Training Toolkit for Humanitarian Aid (GRRT)

Amec Foster Wheeler's Met-Ocean Services can provide a city with weather and marine forecasting services through a password protected map-based web portal that can include weather and severe weather forecasting, marine monitoring and forecasting for ports, and flood forecasting services.

Amec Foster Wheeler will help cities to develop an action plan to obtain grants or funding for specific resilience projects. A city will be provided with a pre-feasibility study information package including research, options for investments, cost benefit analyses and terms of reference for a feasibility study. Cities will also be supported in putting together a feasibility study.

World Bank Treasury will provide technical assistance to cities in: (1) transferring parts of their catastrophe risk to financial markets in a cost-effective way, and (2) working with those cities that decide to transfer risk, to progressively build more efficient disaster risk financing strategies by improving their understanding of their disaster risk and disaster risk financing options.

Cities that join EHCC report their climate change and environmental sustainability data. EHCC also highlights solutions and challenges for cities and identifies options for networking and collaboration between cities to build energy security, environmental sustainability, and climate resilience.

The Green Recovery and Reconstruction Training (GRRT) is a training program designed for city officials responsible for disaster, environmental or climate issues to help cities improve their resilience to multiple hazards in the rebuilding process.

<p>The service is suited for all cities, especially coastal cities with ports, to ready their emergency response teams and to take actions to mitigate harmful effects. The service is also suited for cities seeking to better prepare their systems and ensure that facilities and infrastructure are adequately designed for resilience and sustainability in the future.</p>	Never Required	Limited
<p>Services are best suited for cities that are looking to obtain funding from development banks or other funding sources to move a project from planning to implementation.</p>	Never Required	Limited
<p>The proposed program will help cities insure against natural disasters generally, according to accessible modelling resources, data availability, vulnerability profiles, etc. The program will be predicated upon the premise that a specific financial transaction is not the ultimate goal but rather as a conduit towards the city developing a broader disaster risk management framework and instilling an ?insurance culture?.</p>	Never Required	5
<p>Cities can use EHCC to track their climate and environmental actions in a transparent and comparable manner and receive feedback and global recognition for their work. It is suited for cities at different stages of their climate and environmental planning, and can be used for planning, harmonization of reporting standards, and to seek investments for mitigation and adaptation strategies.</p>	Never Required	Not Limited
<p>GRRT trainings increase local capacity to reduce risk by ensuring disaster response, recovery and risk reduction programs include environmentally responsible considerations, which are critical for building resilient communities.</p>	Sometimes Required	Not Limited

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